Remarks/Arguments:

The present invention relates to an eye image pickup device for capturing eye images. Specifically, the eye image is degraded and then displayed.

On page 2, the Official Action objects to page 4 of the specification because of the reference to claim 1. Thus, Applicants have amended page 4 of the specification to delete the phrase "according to claim 1."

On page 2, the Official Action rejects claim 1 under 35 U.S.C. § 101 because the claim does not recite a computer readable medium. Thus, Applicants have amended claim 21 to include the phrase "computer readable medium."

On page 4, the Official Action rejects claims 1-6 and 17-21 under 35 U.S.C. § 102(b) as being anticipated by Oda (U.S. Patent No. 6,850,631). It is respectfully submitted, however, that the claims are patentable over the art of record for the reasons set forth below.

Oda teaches an eye image pickup device. Specifically, Oda teaches the eye image being converted into another geometrical shape.

Applicants' invention, as recited by claim 1, includes a feature which is neither disclosed nor suggested by the art of record, namely:

> **degrading an at least iris-containing area in the eye image with a condition of retaining a shape of the iris-containing area**

Claim 1 relates to a process for degrading the display eye image while maintaining the correct shape of the iris area. The eye image is degraded so that it can not be captured and utilized by an unwanted party, but also must maintain the correct shape so the user is able to recognize their own eye. This feature is found in the originally filed application in Figs. 4-7. No new matter has been added.

In col. 8, line 65, Oda teaches converting an eye image into another geometrical shape ("*the iris image is converted into a geometrical pattern*"). Col. 8, lines 66-67 of Oda furthermore disclose that the converted geometrical shape is displayed ("*geometrical*

pattern is ... displayed on the monitor"). For example, Figs. 5 and 6 of Oda shows the eye image being converted into a geometrical shape. In example (A), iris 7 is fully round and thus is converted into round geometrical shape 54. In example (B), iris 7 is cutoff on the top and the bottom and thus is converted into elliptical geometrical shape 55. Furthermore, example (C) shows iris 7 looking up which thus is converted into concave down elliptical shape 56. These geometrical patterns are stored in the table in memory as shown in Fig. 6 of Oda. The reason that Oda converts the eye image into a geometrical shape and then displays that geometrical shape is to let the user be aware of the position of their eye. For example, if the user is shown geometric pattern 2 in Fig. 6, this indicates that the eye is narrow and that the system needs the user to open their eyes wider. Thus, Oda **does not maintain the shape of the iris**, but rather converts the iris into another geometrical shape.

Applicants' claim 1 is different than Oda, because the eye image is **degraded while maintaining the shape of the iris** before it is displayed ("*degrading and at least iris-containing area in the eye image with a condition of retaining a shape of the iris-containing area*"). For example, Figs. 4-7 of the specification show four different degradation techniques wherein pixel values are altered (Fig. 4 compression, Fig. 5 pixel reduction, Fig. 6 addition of noise and Fig. 7 pixel reduction and compression). These degradation techniques produce pixel altered images that are degraded just enough to prevent the unauthorized use of the image while still maintaining the shape of the iris (eye image still looks like the user's eye). For example, the displayed image maintains the iris shape which makes it discernable to the user, but is degraded just enough that it cannot be used for identity theft.

It is because Applicants include the feature of "*degrading an at least iris-containing area in the eye image with a condition of retaining a shape of the iris-containing area*," that the following advantages are achieved. An advantage is the ability to securely display the eye image so that it has a natural appearance but is degraded enough to prevent identity theft. Accordingly, for the reasons set forth above, claim 1 is patentable over the art of record.

Independent claims 19-21 have been similarly amended to claim 1. Thus, independent claims 19-21 are also patentable over the art of record for the reasons set forth above.

Dependent claims 2-18 include all of the features of claim 1 from which they depend. Thus, claims 2-18 are also patentable over the art of record for the reasons set forth above.

New dependent claims 22-25 have been added to the application. These claims recite the detection of an iris pupil area, an eye lid area and the subtraction of these two areas in order to obtain an iris-containing area. These claims are patentable by virtue of their dependency on allowable independent claims 1, 19, 20 and 21, respectively. Support for these new claims can be found in Figs. 10, 12, 16 and 17. No new matter has been added.

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,

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